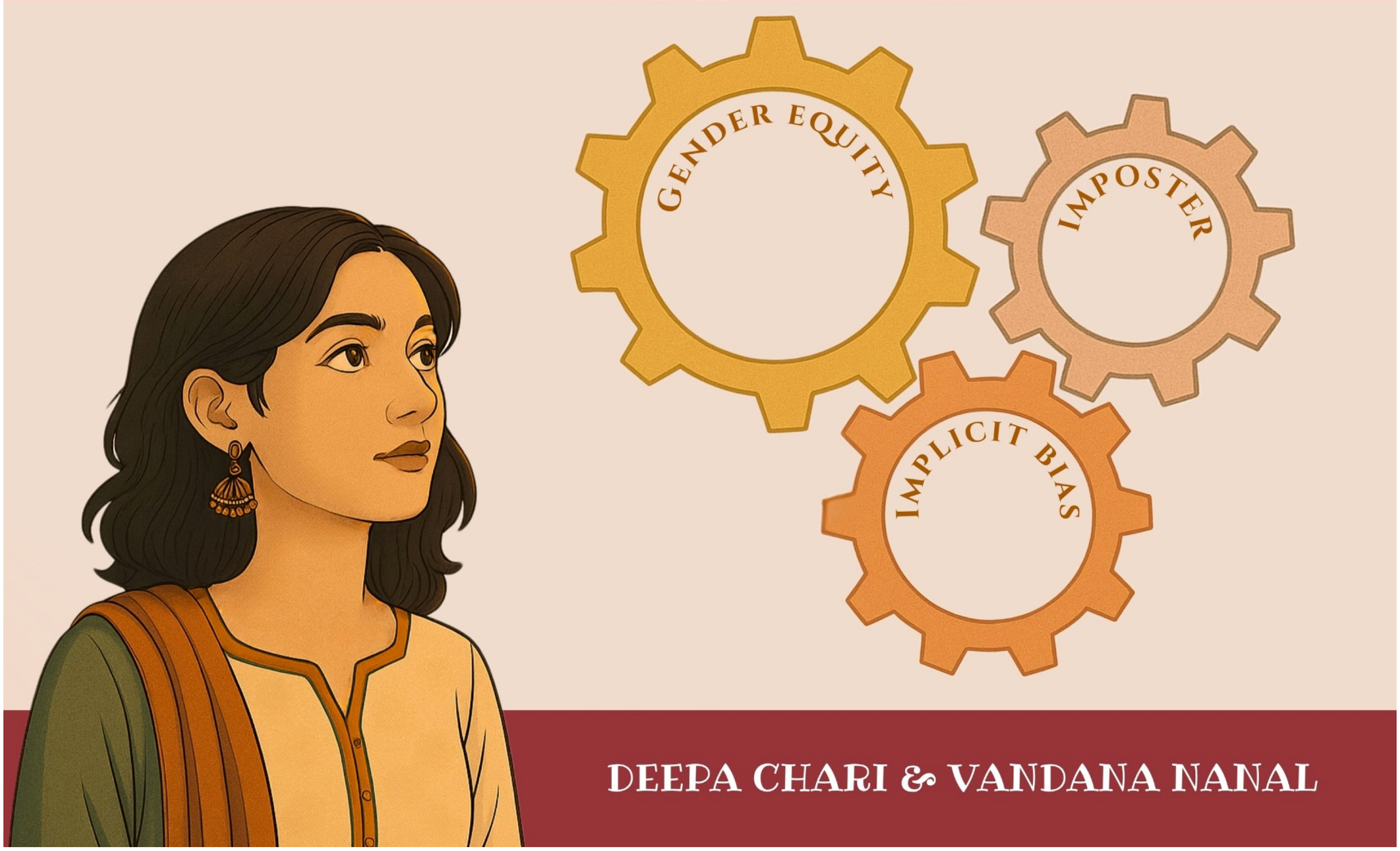
TUNING MENTAL FRAMEWORKS


GENDER EQUITY
IMPOSTER
IMPLICIT BIAS

DEEPA CHARI & VANDANA NANAL

TUNING MENTAL FRAMEWORKS

Genesis of “Tuning Mental Frameworks”

Hello everyone !!!

Life is full of challenges, right?

Is your decision/choice ever presumed because of your gender?
Have you doubted your competence because of someone’s comments?
Do you feel other classmates have more clarity than you?
Rest assured - you are not alone....

The first step towards overcoming such challenges is to become aware of issues like imposter syndrome (self doubt), conscious and unconscious prejudices/biases- of your own as well as of those around you.

The book *“Tuning Mental Frameworks”* is a collection of cartoons depicting some common situations like the feeling of imposter syndrome, implicit biases, and microaggressions (i.e. biases which may lead to subtle hurtful actions). Some of these may be familiar to you, while some may be new... When you read these stories, peep into your lives and observe your surroundings/ friends. Can you spot some of the hidden traits in and around you?

We also encourage you to reflect on the impact of these stories. Do you think some of the situations can be roadblocks to someone’s success? What can be done to address such challenges?

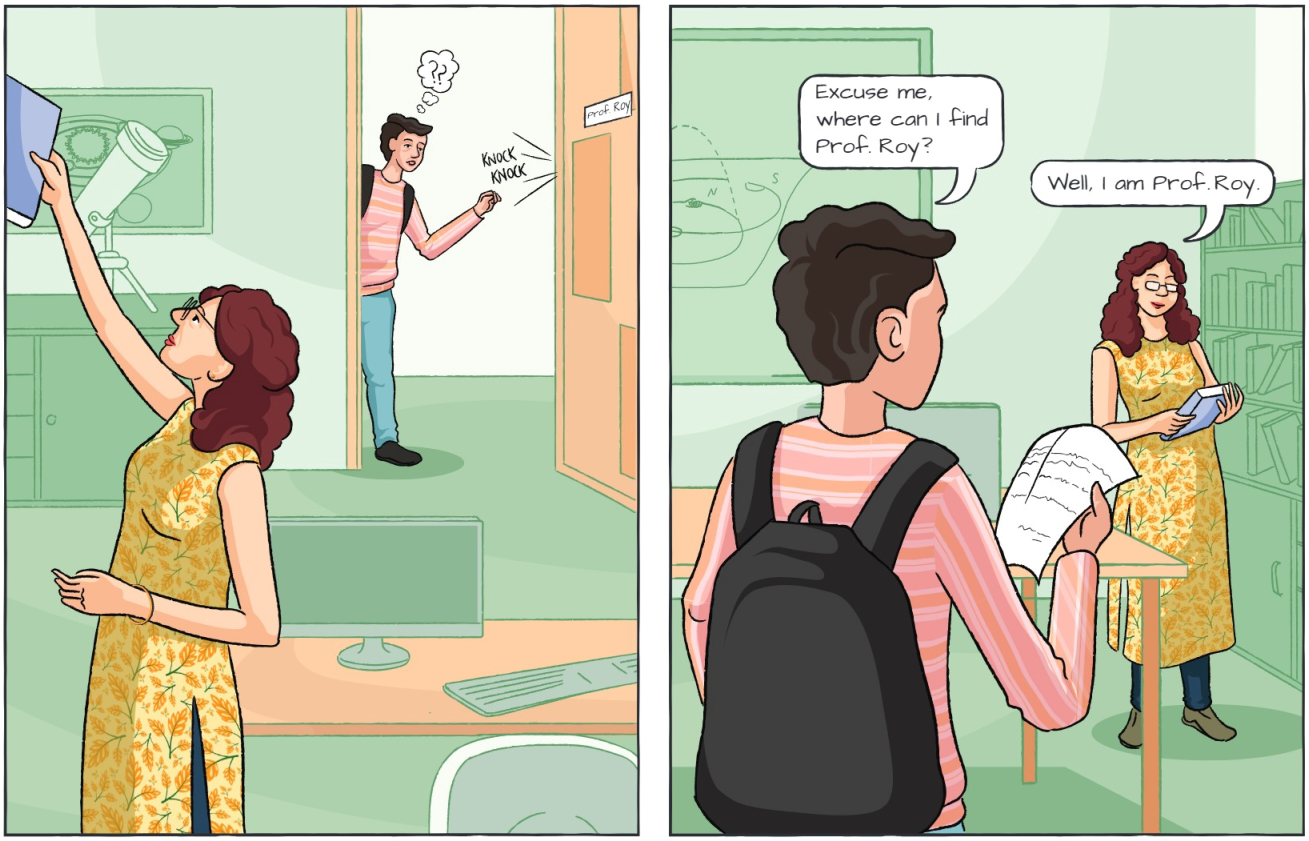
The book is mainly aimed at science students at the graduate level. It has its roots in interactive workshops conducted as a part of TIFR *Vigyan Vidushi (Physics)* programme and the Gender in Physics Working Group (GIPWG) activities.

We hope these stories will pave the way to overcome the imposter syndrome and to eliminate biases, thereby collectively fostering a positive environment.

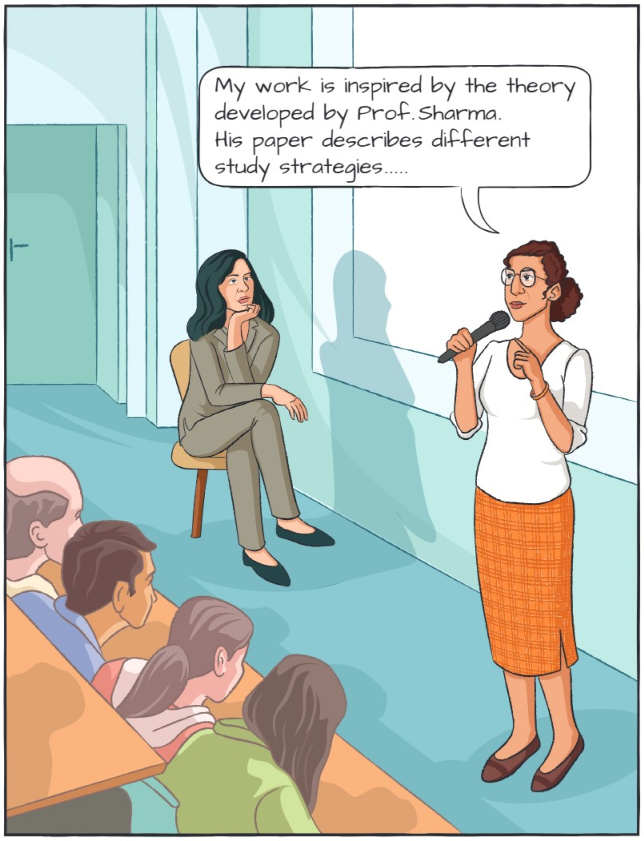
Happy reading!!!

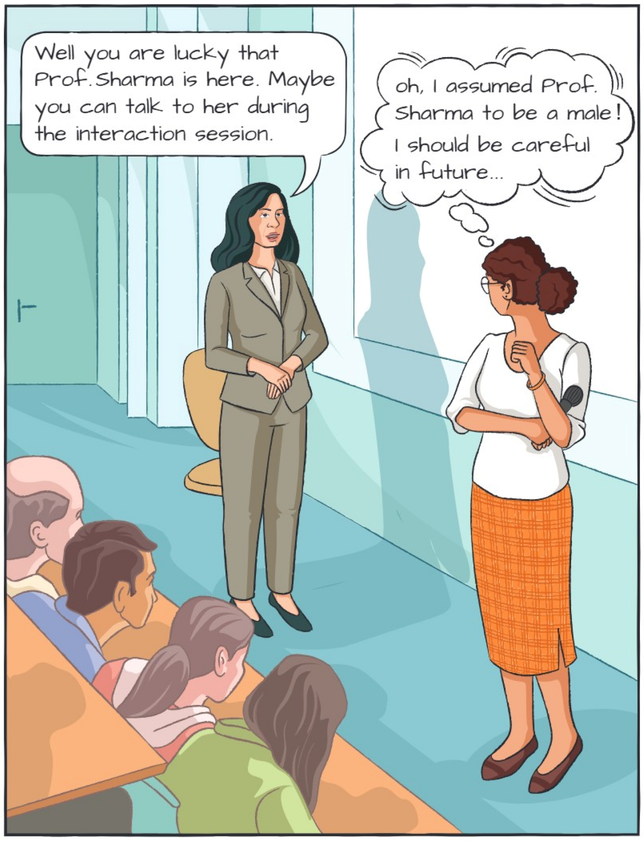
Deepa Chari and Vandana Nanal

When one thinks of a professor…

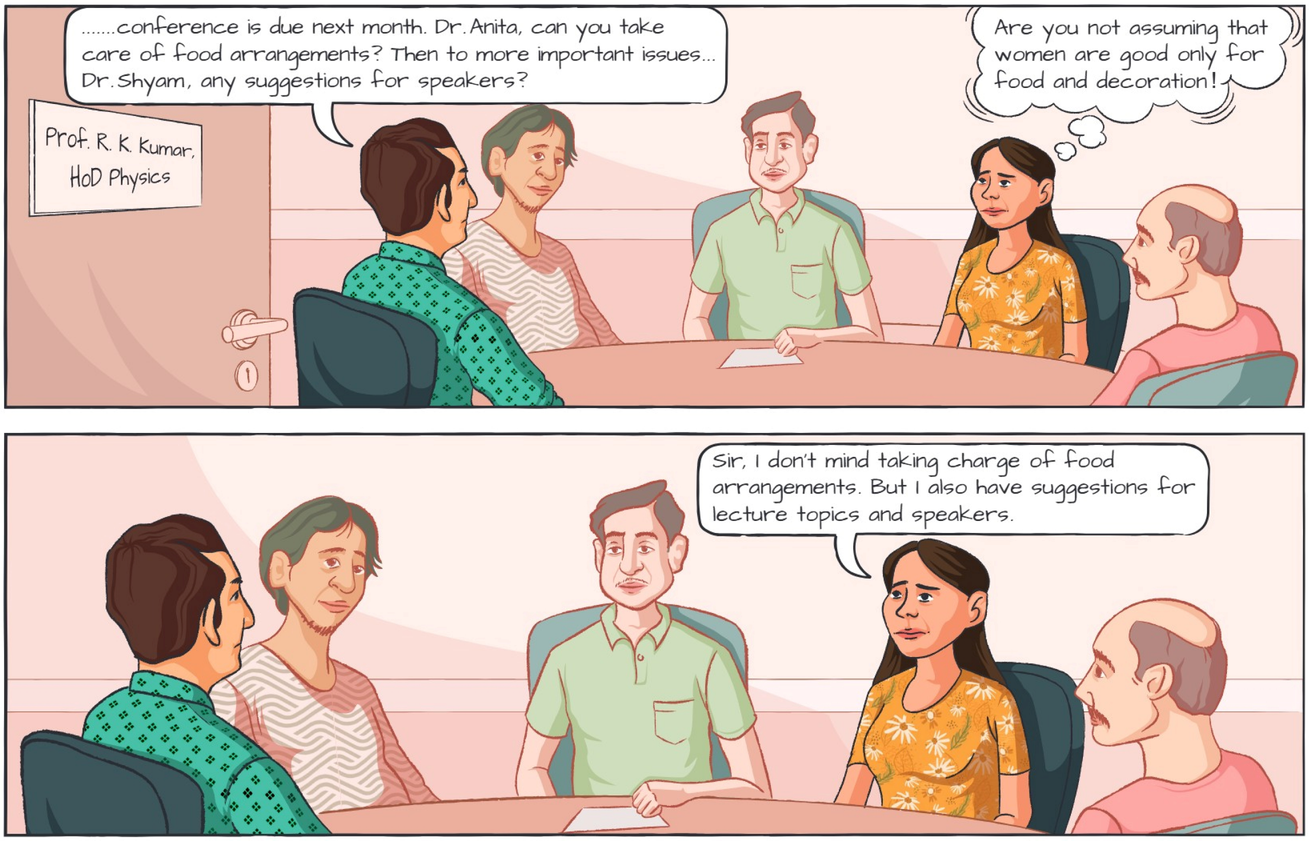

?
Prof. Roy
KNOCK KNOCK
Excuse me, where can I find Prof. Roy?
Well, I am Prof. Roy.

...When one thinks of a professor

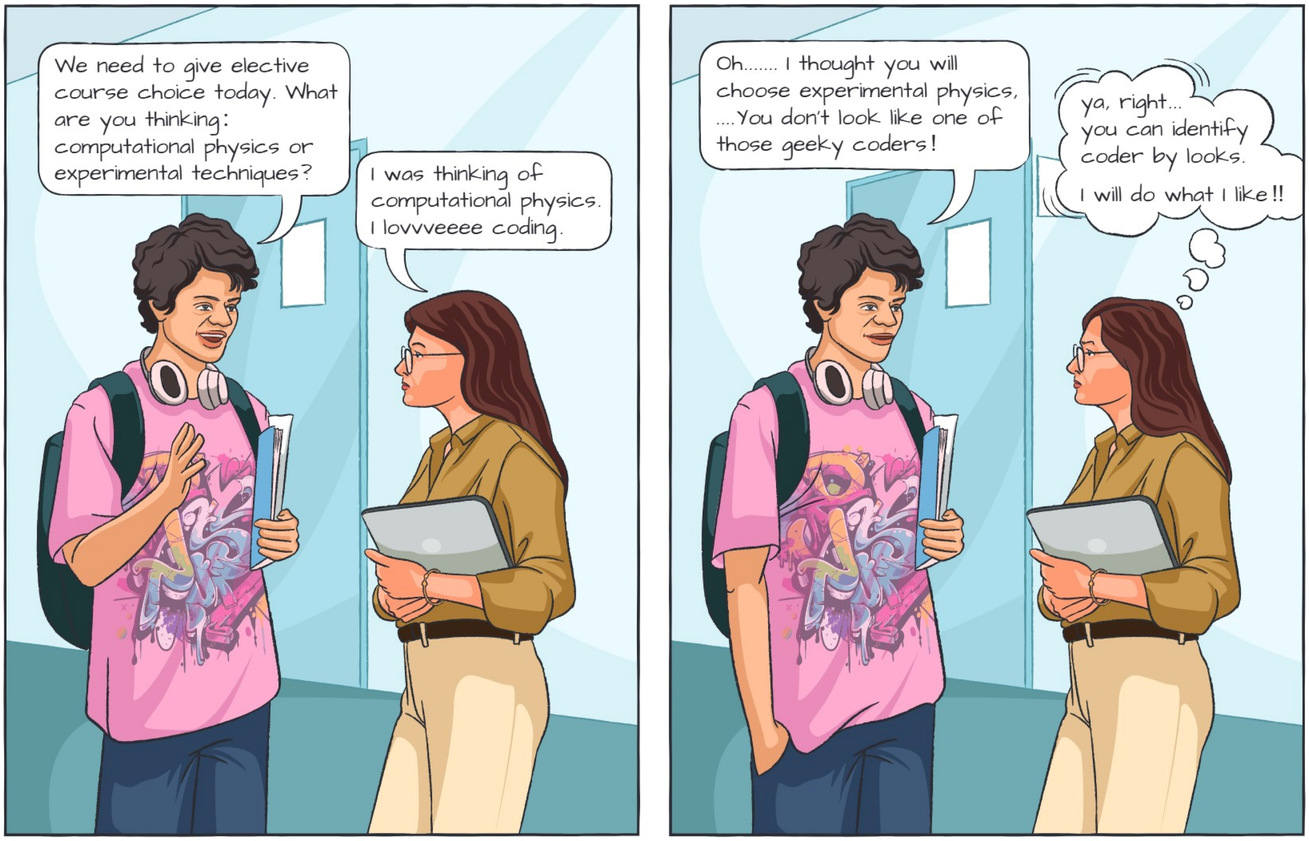

My work is inspired by the theory developed by Prof. Sharma. His paper describes different study strategies.....


Well you are lucky that Prof. Sharma is here. Maybe you can talk to her during the interaction session.
oh, I assumed Prof. Sharma to be a male! I should be careful in future...

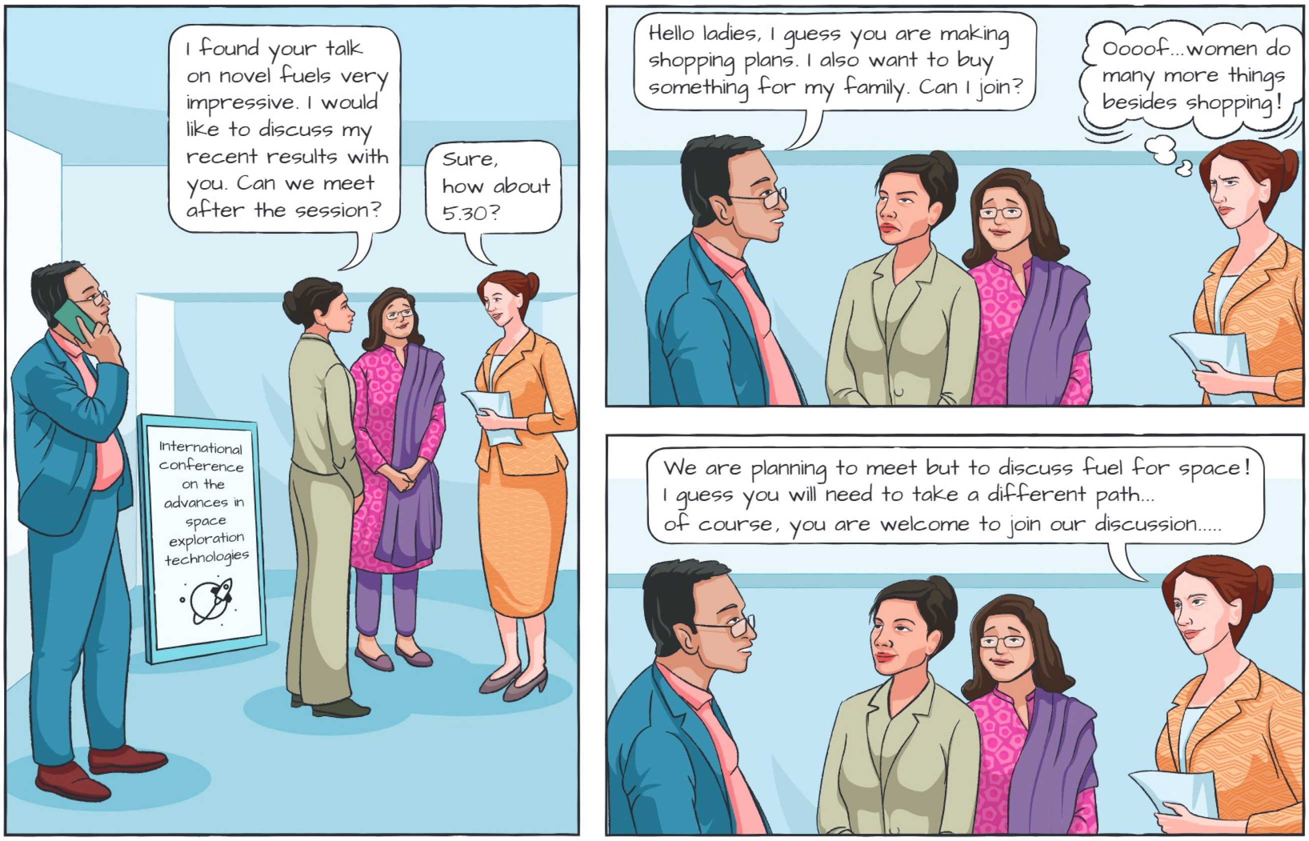
Breaking typical conventions…


.......conference is due next month. Dr. Anita, can you take care of food arrangements? Then to more important issues... Dr. Shyam, any suggestions for speakers?
Prof. R. K. Kumar, HoD Physics
Are you not assuming that women are good only for food and decoration!
Sir, I don't mind taking charge of food arrangements. But I also have suggestions for lecture topics and speakers.

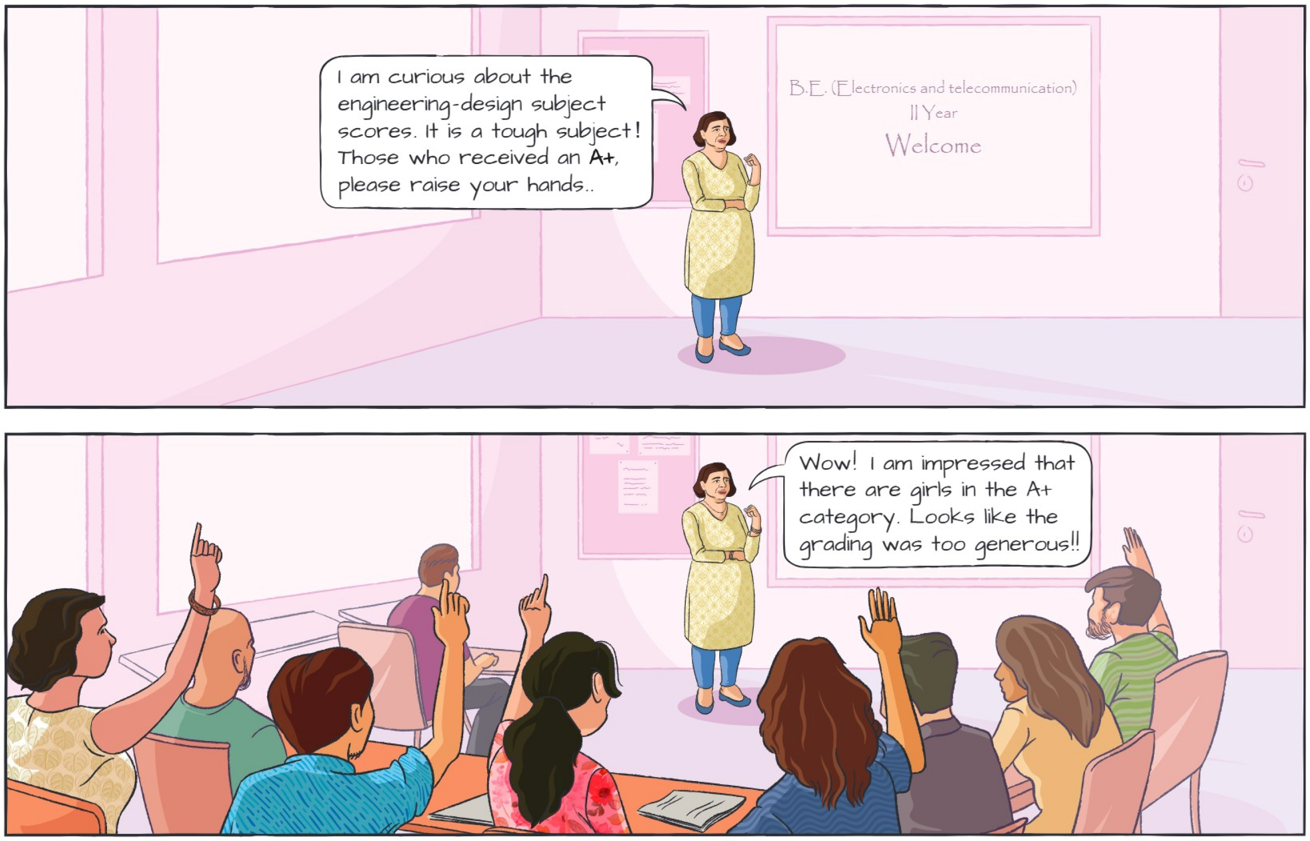
...Breaking typical conventions


We need to give elective course choice today. What are you thinking: computational physics or experimental techniques?
I was thinking of computational physics. I lovvveeee coding.
Oh....... I thought you will choose experimental physics, ...You don't look like one of those geeky coders!
ya, right... you can identify coder by looks.
I will do what I like!!

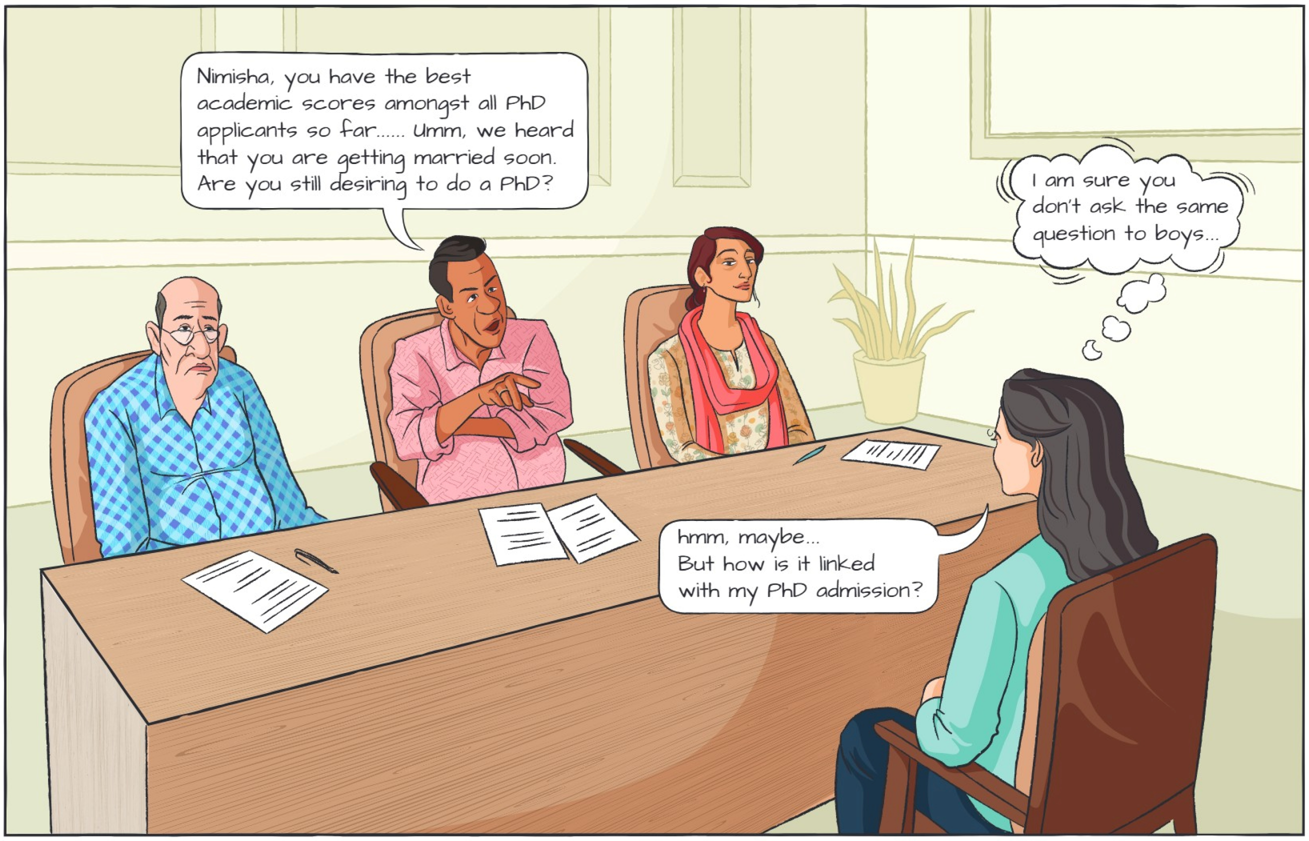
Presumptions can land you in soup...


I found your talk on novel fuels very impressive. I would like to discuss my recent results with you. Can we meet after the session?
Sure, how about 5.30?
International conference on the advances in space exploration technologies
Hello ladies, I guess you are making shopping plans. I also want to buy something for my family. Can I join?
Oooof...women do many more things besides shopping!
We are planning to meet but to discuss fuel for space! I guess you will need to take a different path... of course, you are welcome to join our discussion.....

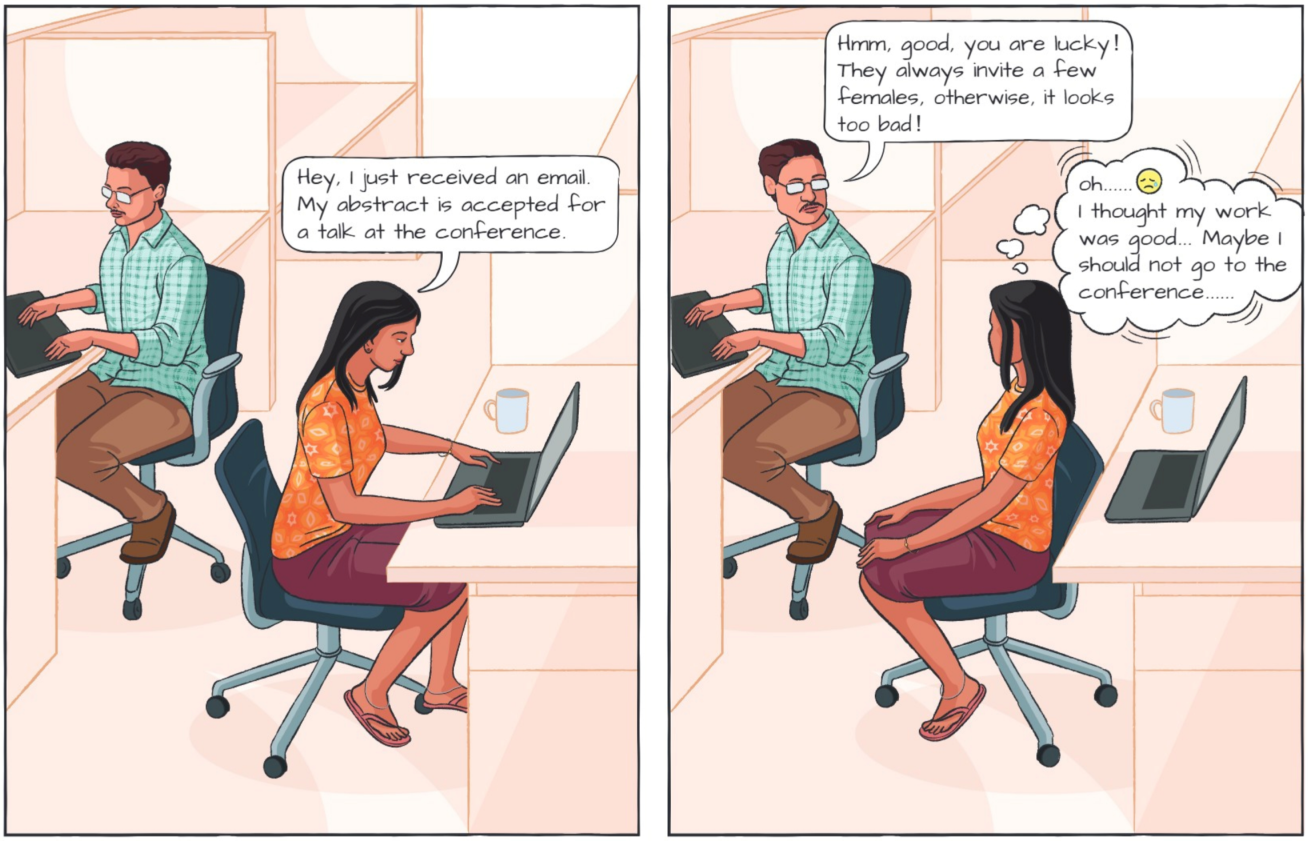
...Presumptions can land you in soup


I am curious about the engineering-design subject scores. It is a tough subject! Those who received an A+, please raise your hands..
B.E. (Electronics and telecommunication)
II Year
Welcome
Wow! I am impressed that there are girls in the A+ category. Looks like the grading was too generous!!

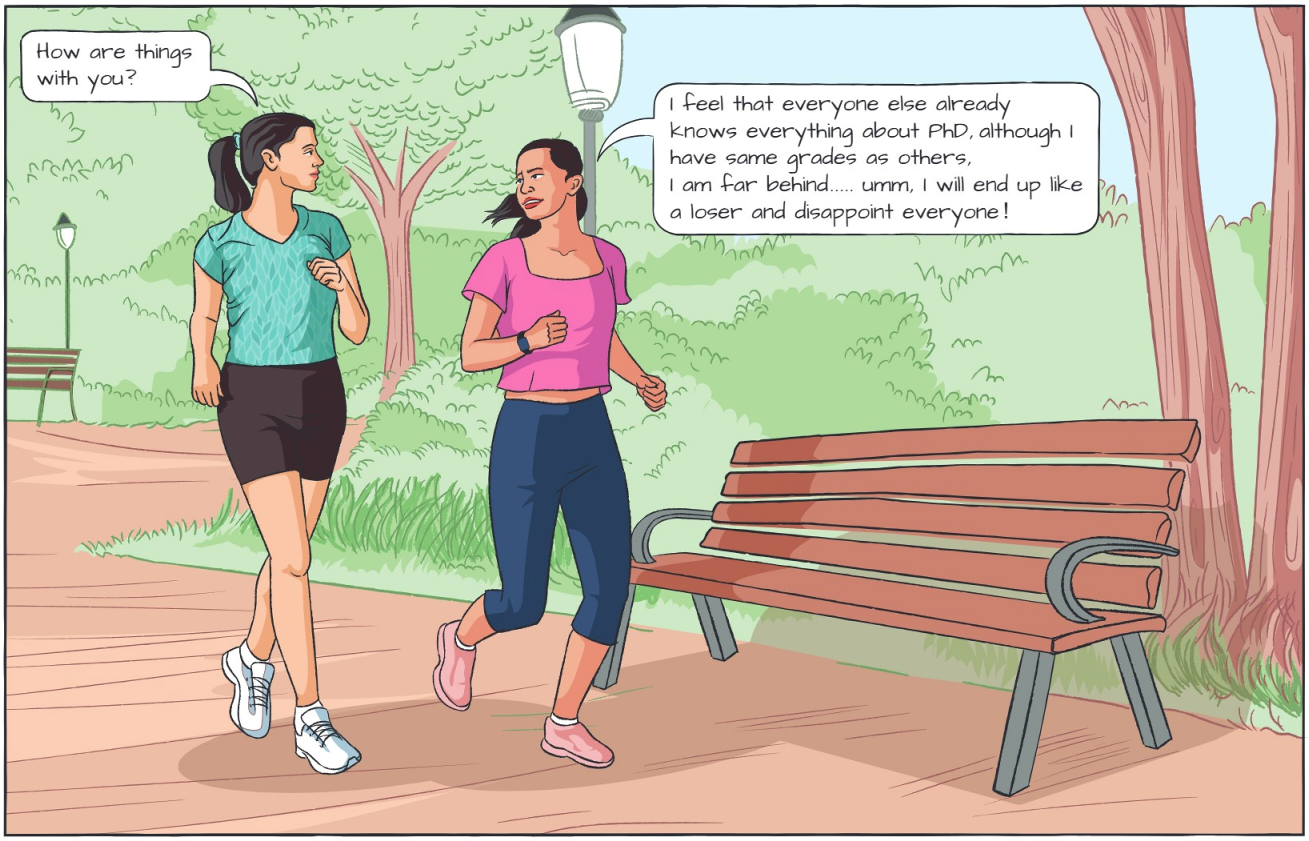
Respect the boundaries - Professional vs Personal...


Nimisha, you have the best academic scores amongst all PhD applicants so far...... Umm, we heard that you are getting married soon. Are you still desiring to do a PhD?
I am sure you don't ask the same question to boys...
hmm, maybe... But how is it linked with my PhD admission?

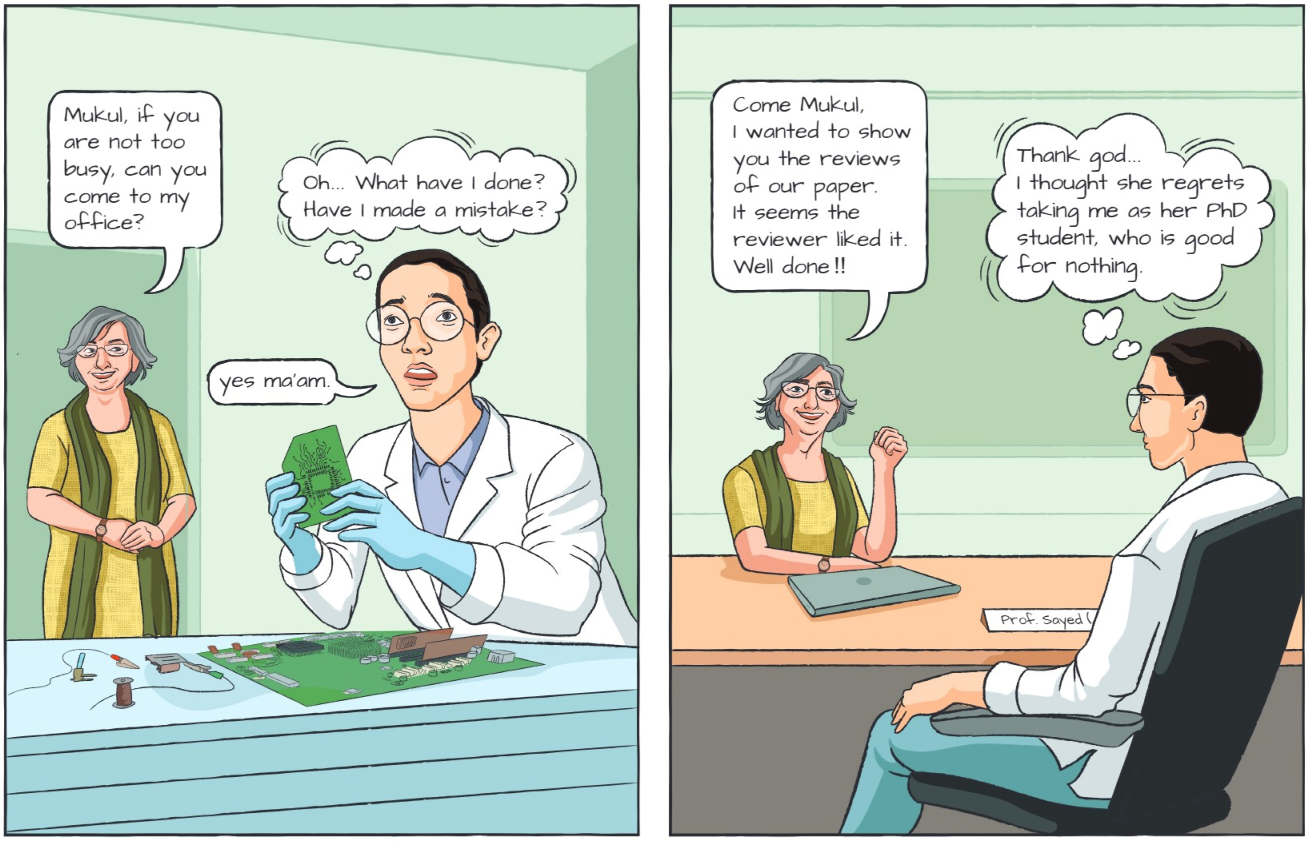
…Callous comments can be harmful


Hey, I just received an email. My abstract is accepted for a talk at the conference.
Hmm, good, you are lucky! They always invite a few females, otherwise, it looks too bad!
oh...... 😞 I thought my work was good... Maybe I should not go to the conference......

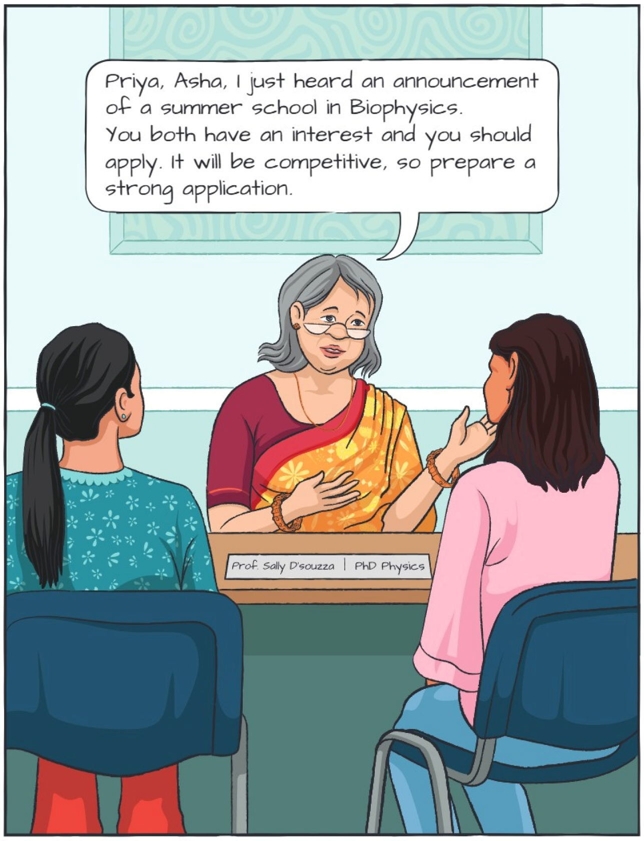
Fear within…

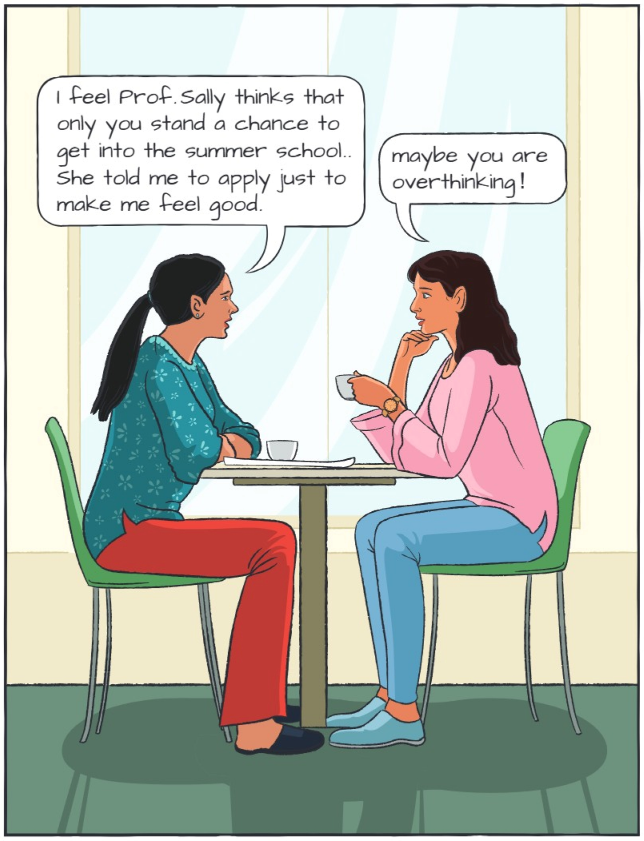

How are things with you?
I feel that everyone else already knows everything about PhD, although I have same grades as others, I am far behind….. umm, I will end up like a loser and disappoint everyone!

...Fear within

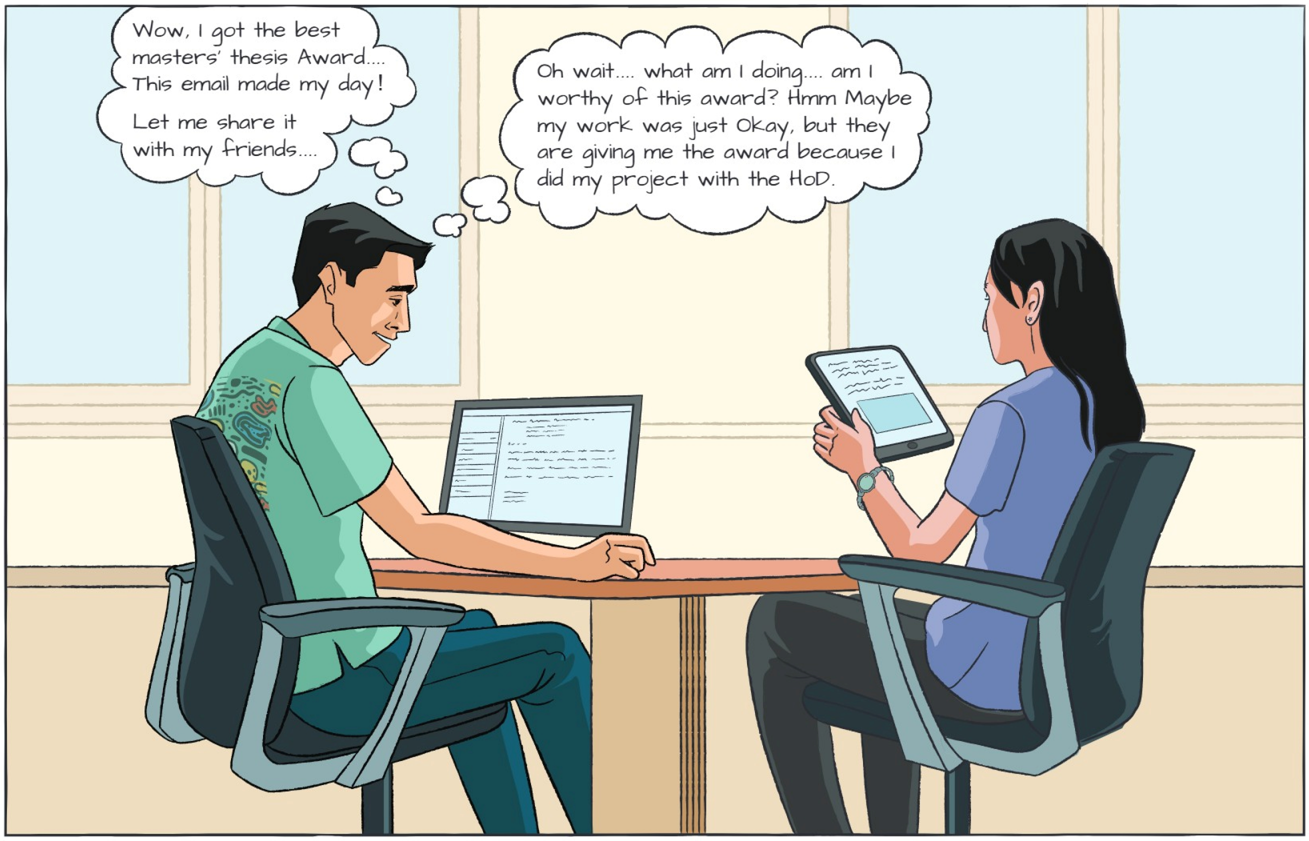

Mukul, if you are not too busy, can you come to my office?
Oh... What have I done? Have I made a mistake?
yes ma'am.
Come Mukul, I wanted to show you the reviews of our paper. It seems the reviewer liked it. Well done!!
Thank god... I thought she regrets taking me as her PhD student, who is good for nothing.
Prof. Sayed

Value yourself…

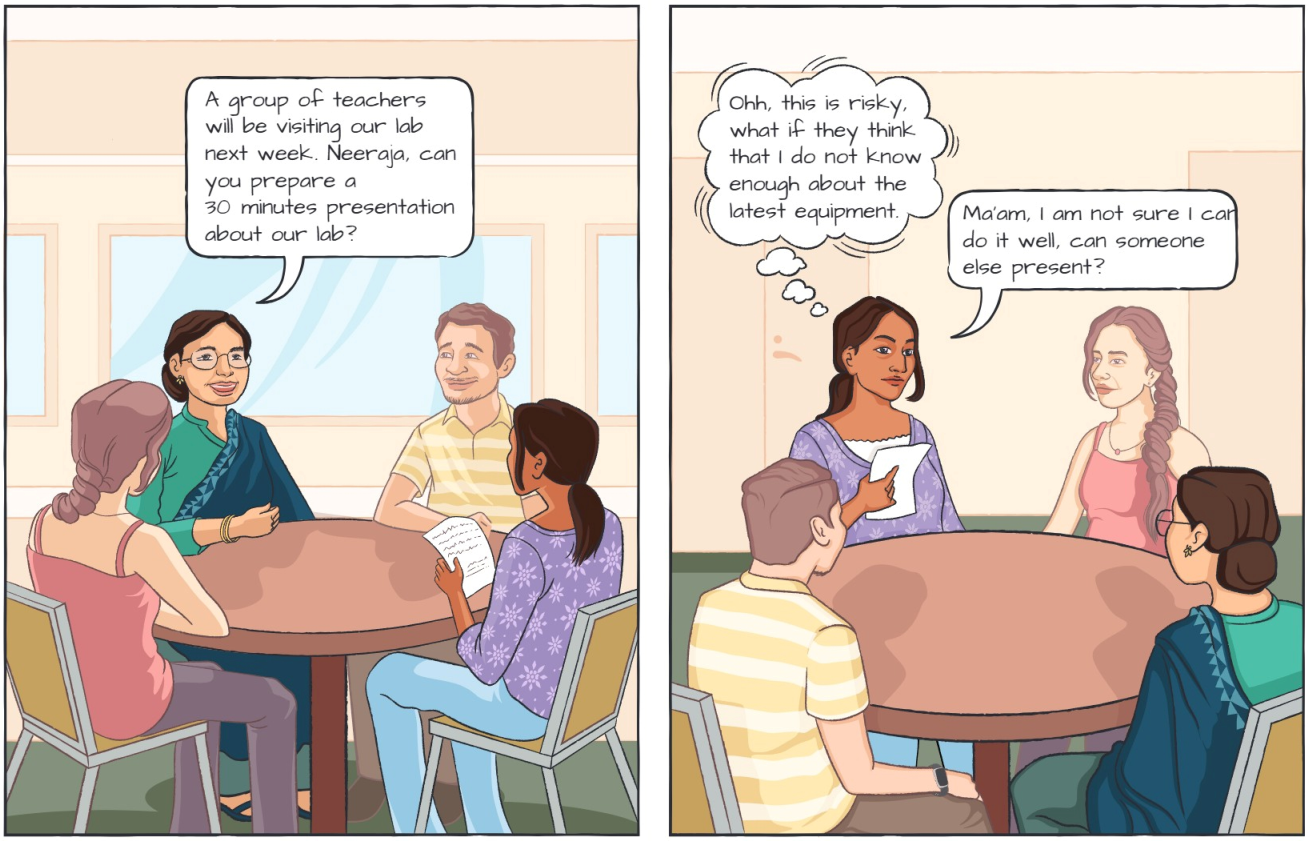

Priya, Asha, I just heard an announcement of a summer school in Biophysics. You both have an interest and you should apply. It will be competitive, so prepare a strong application.
Prof. Sally D'souzza | PhD Physics


I feel Prof. Sally thinks that only you stand a chance to get into the summer school.. She told me to apply just to make me feel good.
maybe you are overthinking!

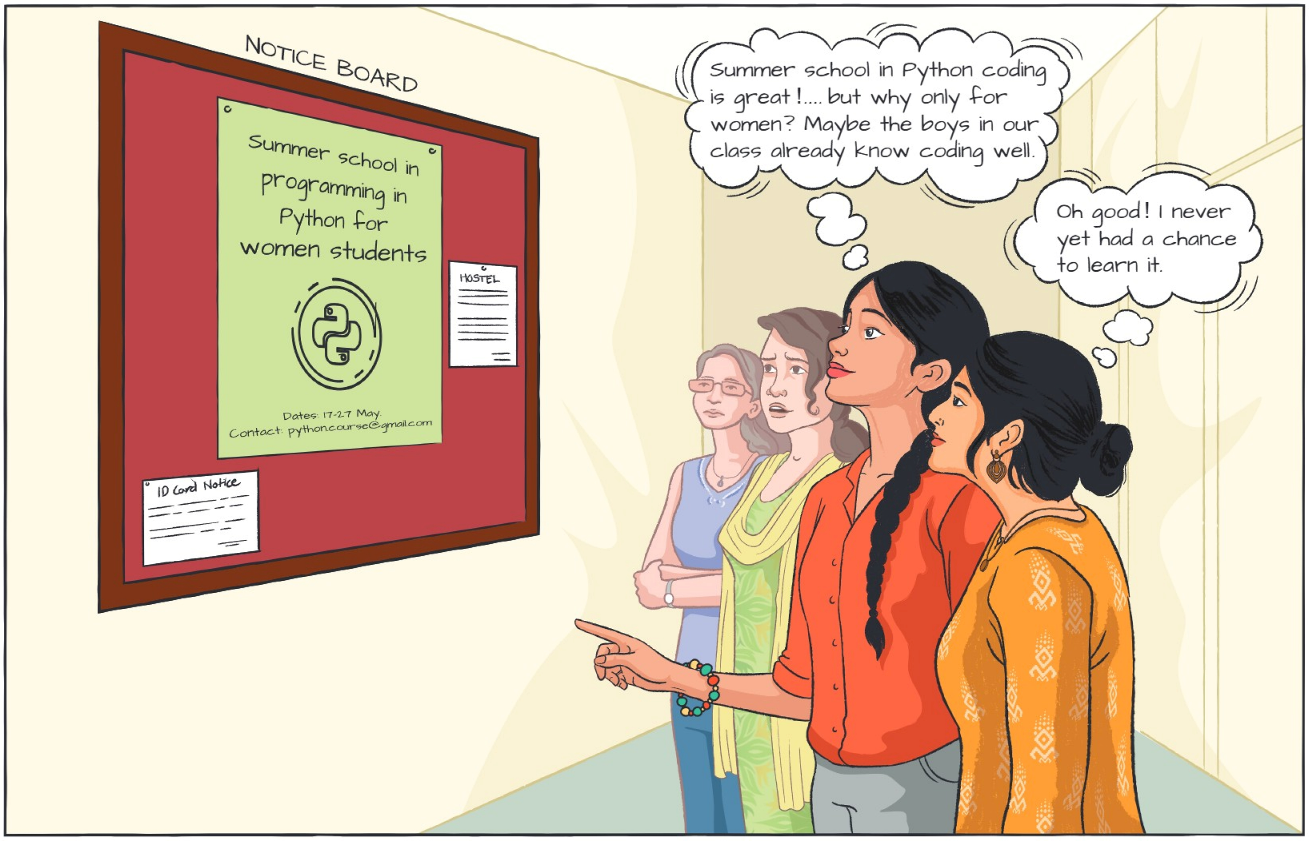
...Persistent self-doubt is injurious to progress


Wow, I got the best masters' thesis Award.... This email made my day!
Let me share it with my friends....
Oh wait.... what am I doing.... am I worthy of this award? Hmm Maybe my work was just Okay, but they are giving me the award because I did my project with the HoD.

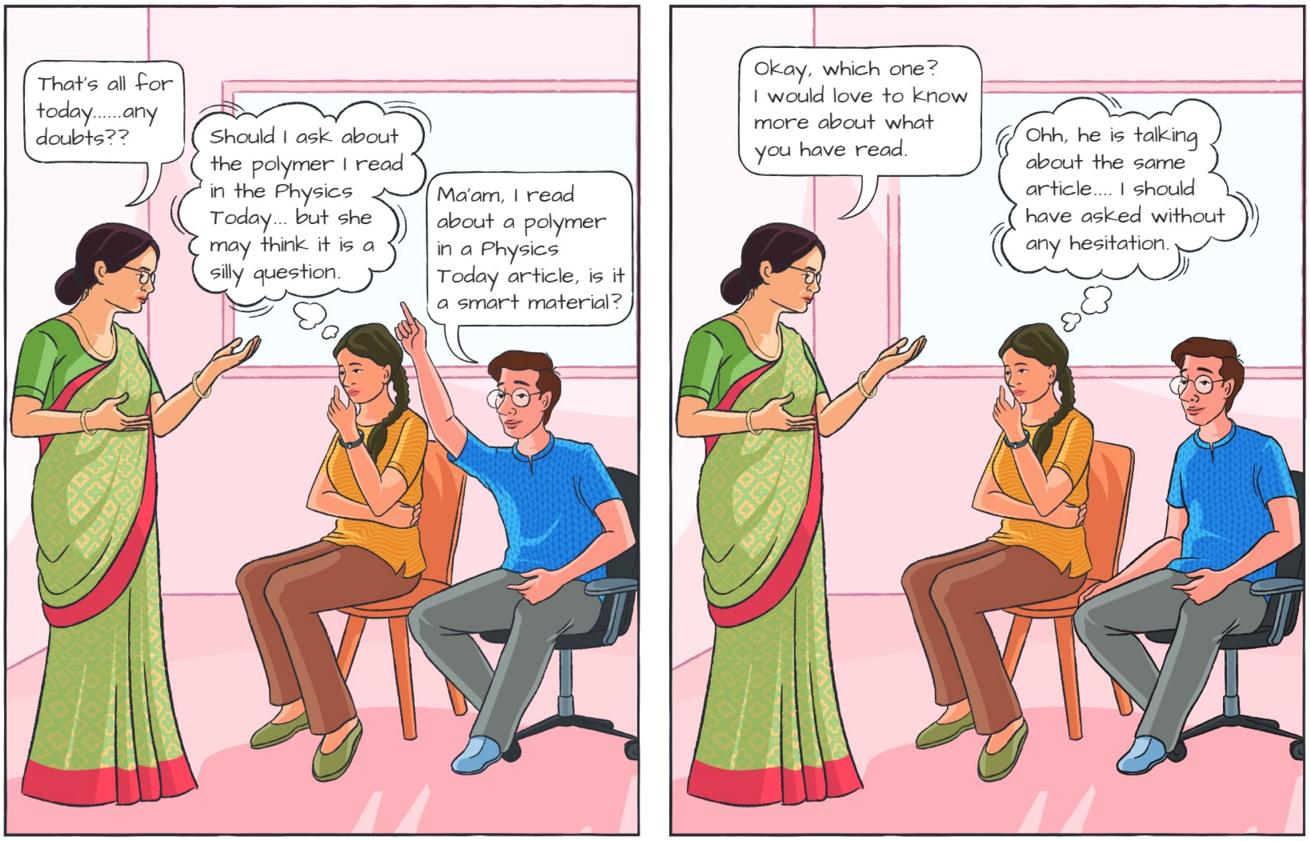
Climb all the mountains...


A group of teachers will be visiting our lab next week. Neeraja, can you prepare a 30 minutes presentation about our lab?
Ohh, this is risky, what if they think that I do not know enough about the latest equipment.
Ma'am, I am not sure I ca do it well, can someone else present?

...Interventions are necessary


NOTICE BOARD
Summer school in programming in Python for women students
Dates: 17-27 May.
Contact: python.course@gmail.com
HOSTEL
ID Card Notice
Summer school in Python coding is great!.... but why only for women? Maybe the boys in our class already know coding well.
Oh good! I never yet had a chance to learn it.

I shall overcome…


That's all for today......any doubts??
Should I ask about the polymer I read in the Physics Today... but she may think it is a silly question.
Ma'am, I read about a polymer in a Physics Today article, is it a smart material?
Okay, which one? I would love to know more about what you have read.
Ohh, he is talking about the same article.... I should have asked without any hesitation.

Reflections….

Did some of the stories appear familiar to situations you encounter in college/ workplace?

Let's understand a bit more about these hidden demons and how they impact our lives:

The feeling of **imposter** or self-doubt is associated with how one judges one's successes and failures differently in comparison to those of others. Such feelings of self-doubt can lead to a belief that one is less competent and, consequently, can result in erosion of confidence. Everybody can suffer from the imposter feeling sometimes or the other. However, studies have shown that women/gender minorities are more prone to this syndrome.

How to overcome it? Don't let the thoughts of self-doubt clutter your mind. Remember that you can achieve whatever you desire, if you put your efforts in the right direction. Also, have trust in the thought that 'your success is your own achievement!'. You can talk about your feelings with friends and build confidence.

Implicit bias is a negative feeling about an individual or group. The person with implicit bias is generally unaware of or can't pinpoint where these feelings are coming from. But the bias can lead to hurtful behaviours, making judgments, and passing subtle negative comments in the form of microaggression. The biased behaviour can adversely affect the person(s) at the receiving end and may fuel the feeling of imposter.

Can one shift the mental framework? It is important to be aware of our biases and how they can impact others. We should be sensitive about what we say to others. Importantly, be vocal about biases…. If you are a witness to or are subjected to biased behaviour, try to correct it to the extent feasible. Remember that the remedial measures will be situation dependent - can be prompt or can be a corrective action/reaction at a later point in the form of protest/counselling. *Also, note that there is no "readymade" or "one-for-all" solution.*

We hope that these stories will prompt you to think about some situations and have stimulating conversations with your friends, increasing awareness all around.

Tuning Mental Frameworks
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Dr. Deepa Chari

Deepa Chari is a faculty member at the Homi Bhabha Centre for Science Education, TIFR. Passionate about physics teaching, she is one of the lead coordinators for Vigyan Pratibha - a national level student nurture and teacher capacity building programme in high school science and mathematics. Through various institutional programmes, she works towards increasing awareness about gender equity and necessary interventions. She worked as a member of the Gender in Physics Working Group (GIPWG) of the Indian Physics Association during 2021-22.

Prof. Vandana Nanal

Vandana Nanal is a senior professor working in experimental nuclear and accelerator physics at TIFR. Her research covers very broad, yet focused problems from neutrinos to nuclei. She has been associated with the Gender in Physics Working Group (GIPWG) of the Indian Physics Association since its inception and served as its Chair during 2023-24. Featured in “She is – 75 women in STEAM” as an exemplary role model, her rigorous work for promoting gender equity in science is evident through many avenues.

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